Brachiopoda are with the Polyzoa. As in the Polyzoa, the flexure of the intestine is neural, and they take a very natural position among the neural mollusks between the Polyzoa on the one hand, and the Lamellibranchs and Pteropoda on the other.

The arms of the Brachiopoda may be compared with those of the Lophophore Polyzoa, and if it turns out that the so-called hearts are not such organs, one difference will be removed.

In conclusion, I may repeat what I have elsewhere adverted to, that though the difference between the cell of a Polyzoon and the shell of a Terebratula appears wide enough, yet the resemblance between the latter with its muscles and the Avicularium of a Polyzoon, is exceedingly close and striking.

ZOOLOGICAL SOCIETY.

November 25, 1851.—W. J. Broderip, Esq., F.R.S., Vice-President, in the Chair.

On a species of Æquorea inhabiting the British Seas. By Prof. Edward Forbes, F.R.S.

In the first volume of the 'Wernerian Memoirs' a "*Medusa æquorea*" is mentioned by Prof. Jameson as an inhabitant of the seas of the north of Scotland, and in the 'History of British Animals' by Dr. Fleming, the name "*Geryonia æquorea*" is used to designate it. As no description or figure was ever published of this creature, and as the diagnosis of the "*Medusa*" to which Linnæus applied the name of "*æquorea*" was too brief for identification, it is possible that some one out of several Acalephæ inhabiting our seas might have been intended.

It is also possible, however, that a true *Æquorea* had been seen, for there is a most beautiful species of this genus an inhabitant of the Scottish seas. I met with it for the first time in August 1850, when exploring the Minch (the channel between the outer Hebrides and Skye) in company with Mr. MacAndrew and Prof. Goodsir, with the advantages of the appliances for natural-history research with which Mr. MacAndrew has furnished his yacht, the *Naiad*. As there is neither figure nor description of any British *Æquorea* to be found, and as considerable obscurity hangs around the Atlantic species of the genus, I have drawn up the following notice.

A number of individuals were observed: they were swimming near the surface of the sea on a very calm and hot day: they varied in size, from three inches in diameter to as much as half a foot or more: they resembled broad shield-shaped discs of glass, slightly prominent above, incurved at their sides and concave beneath: through the discs were seen shining the pendent brown-tinged stomach, and around it, like so many equal stripes or rays proceeding to the margin, the linear violet genital glands: from the margin depended highly-contractile violet tentacles.

The umbrella is broad, shallow, and disc-shaped, its outline de-

scribing a gentle curve. It is hyaline, not very thick, and quite smooth. The central portion of its interior, occupying about one-fourth of its diameter, has dependent from it the membranous veil-like walls of the stomach; these hang not quite so low as on a line with the margins of the umbrella. The stomach, although equal in width throughout, may be divided into two regions, an upper and a lower. The latter has a furbelowed and somewhat scalloped, but not cirrated margin, and may be regarded as the mouth. The former is marked internally by eight bands of transverse fibres, separated by as many longitudinal ones; these appear to be muscular. The whole of the membrane of the stomach and lips is tinged with pale foxy brown, partly disposed in streaks. Around the upper and inner margin of the cavity are the orifices of the gastro-vascular canals; these run, without dividing or anastomosing, to the circular marginal canal of the umbrella. In a specimen five inches across, they were 136 in number. From the lower side of each canal depend two narrow, rather wavy membranes of a violet colour, causing the ray-like streaks that shine so conspicuously through the disc; each of these arises gradually near the superior extremity of a gastro-vascular canal, and ceases abruptly at about one-eighth of the entire length of the canal from the margin: they are the genital glands. At the junction of each alternate gastro-vascular canal with the circular marginal one is the bulb-like base of a marginal tentacle: these tentacles arise from ovate bulbs and gradually taper to a fine point. The bulbs are pale, but the tentacle is tinged with violet. Opposite the intermediate canal there is a smaller bulb with a tentacle, hollow and containing corpuscles in its centre, and on each side, between it and the neighbouring tentacle, is a still smaller lobe-like body. Along the upper margin of the circular canal are very minute pedunculated organs that move to and fro. On the bulb at the base of the tentacula is a minute tongue-shaped process at the base of a depression; at its own base the ocellus or rudimentary eye is lodged. When seen laterally, the peculiar tissue of the base of the tentacles is observed to be set obliquely. Within the umbrella, from a line just opposite the tentacular circle, a short but rather broad veil with a simple edge is seen to depend; this veil is tinged with pale brown. A band of motor tissue, forming a sphincter to the umbrella, accompanies the circular vessel.

According to the size of the example, the number of genital glands and of tentacula varied: they increase with age. The smallest number of tentacula seen was sixteen, and there is reason to believe that they are never fewer.

To ascertain whether this beautiful animal be the *Medusa æquorea* of Linnæus and the naturalists who wrote during his time, it is necessary to inquire into the history of that species. The name just mentioned occurs first in the 'Iter Hispanicum' of Peter Loefling, published in 1758. In his journal of observations on the 18th of April, at Cumana, he notices, along with *Medusa* (i. e. *Aurelia*) *aurita*, *Medusa pelagica* (*Pelagia cyanella*?), and *Velella*, another Medusa, which he styles *Æquorea*, and describes as "*orbicularis*,

planiuscula, tentaculis plurimis ex margine inflexo, branchiis nullis." This notice, which occurs at page 105 of the Swedish edition of his 'Travels,' is the entire original foundation for numerous references in after-authors. Linnæus, in the first instance, adopted Loefling's name and brief record, which, when read with our present knowledge of *Acalephæ*, barely indicates the genus to which the animal observed probably belonged. In 1775, the descriptions and figures of animals observed during his journey to the East by the lamented Forskäl were published under the superintendence of Carsten Niebuhr. Among them was a representation and description of a *Medusa*, referred to the *æquorea* of Linnæus, both excellent, as indeed may be said of all that Forskäl did. In 1776 a *Medusa æquorea* was noticed, scarcely more than by name, in the 'Zoologiæ Danicæ Prodromus' of Otho Frederic Müller. In 1780, Otho Fabricius, in his excellent 'Fauna Groenlandica,' gives a shorter account than usual with him of a Medusa, which he refers to the *æquorea* of Linnæus. He speaks of it as a very simple animal, smaller and softer than *Medusa aurita*, convex above, concave beneath, with very much inflected margins and white marginal cilia. The two last-mentioned characters are opposed to the notion of *Medusa æquorea*, as represented and described by Forskäl, and the first of them to the slight idea of its shape that we gather from Loefling. In 1791 Adolph Modeer commenced the work of hair-splitting by separating the animal of Forskäl, under the name of *Medusa patina*, from that of Loefling, for which he reserved the name *Medusa æquorea*. In 1809 Peron and Lesueur published in the 'Annales du Muséum d'Histoire Naturelle,' vol. xiv., their important classification and synopsis of all known Medusæ. In that paper, excellent though it be, they increase the confusion, by giving the name of *Æquorea atlantica* to Loefling's animal, *Æq. danica* to Müller's, *Æq. grœnlandica* to that of Fabricius, *Æq. Forskalea* to that of Forskäl, and *Æq. stauroglypha* to a new species of their own, probably identical with all the others. In 1829 Eschscholtz, in his 'System der Acalephen,' attempted to rectify this confusion, by rejecting all these names excepting *Æq. Forskalina*, that alone having been sufficiently described. In 1843 Lesson published his History of Acalephæ in the 'Nouvelles Suites à Buffon,' and, to make confusion worse confounded, rejected all rectifications and restored all the names and imperfectly noticed individuals to full specific rank.

After attentively considering the notices more or less perfect that the various older observers have given, of what they call *Medusa æquorea*, I am led to the belief that in most instances one species, not several, was met with, and that the creature which I now describe as British is identical with the *Medusa æquorea* of Loefling, Forskäl and Müller. Since Forskäl alone described and figured it in a comprehensible manner, the name *Æquorea Forskalea*, proposed by Peron, is peculiarly appropriate, the more so since that of *Medusa patina* of Modeer was proposed under a mistake. Forskäl expressly states that his species is common to the North Atlantic and the Mediterranean, and that it inhabits the Danish seas, where it is called "Vandmand," that is, Waterman.

It remains to be seen whether our species is related to the *Æquorea violacea* of Milne-Edwards, well described and beautifully figured in the 16th volume of the 2nd series of the 'Annales des Sciences Naturelles,' and observed by that eminent naturalist in the Mediterranean. From an examination of its anatomy he first showed the serious error committed by Eschscholtz in considering the *Æquoridæ* as cryptocarpous. I am inclined to agree with Milne-Edwards in considering his species distinct from that of Forskäl. The genital glands are not prolonged nearly so close to the margin; the lips of the stomach are not furbelowed; the bases of the tentacles are not bulbous, and originate regularly *between* the gastro-vascular canals.

There were no eyes observed by the distinguished zoologist just quoted in the species he examined. In ours the eyes are evident, and a determination of their position and appearance is of consequence, since they confirm the affinity of *Æquorea* with the Naked-eyed Medusæ, whilst at the same time, in the little appendage or rudimentary lid projecting above them, they indicate an approach to the *Steganophthalmatous* type, such as is consistent with the general high organization and aspect of the *Æquorea* when compared with other *Gymnophthalmatous* forms.

It is interesting to remark that the *Æquorea ciliata* of Eschscholtz is a North Pacific species, beautifully representing, yet quite distinct from, *Æquorea Forskalea*.

December 9, 1851.—W. Yarrell, Esq., in the Chair.

On some Bones of Didus. By A. D. Bartlett.

The history of the Dodo having been recently the subject of so much inquiry, and the exertions made by Mr. Strickland, Dr. Melville and others, having succeeded in bringing together so many important facts, it might appear that there was little more to be said upon the subject; this, however, I believe is far from being the case. A few facts established upon a subject which was before obscured in doubt and error will, I trust, always act as a charm, and induce us at every opportunity to investigate that subject still further, in the hope of learning the truth. On the present occasion I am desirous of calling attention to a few bones upon the table. In so doing I beg to say, that in the year 1830 a collection of bones arrived in Paris, which attracted the attention of the scientific world. These bones came from the island of Rodriguez, but on account of their being incrusted with stalagmite, little has been done with them; they were, however, the cause of search being made for more in the same locality, and two collections were made in the year 1831 by the late Mr. Telfair. One of these collections was forwarded to the Andersonian Museum in Glasgow, the other to the collection of this Society, and at the evening meeting, March 12, 1833, the bones sent by Mr. Telfair were laid upon the table.

I will here read an extract from the Society's Proceedings:—"Dr. Grant pointed out that they were the bones of the hinder extremity of a large bird, and the head of a humerus. With reference to the

metatarsal bone, which was long and strong, Dr. Grant pointed out that it possessed the articulating surfaces for four toes, three directed forwards and one backwards, as in the foot of the Dodo preserved in the British Museum, to which it was also proportioned in magnitude and form."

I beg now to read a paragraph from Mr. Strickland's book. At page 52 we find: "The bones sent by Mr. Telfair in 1833 to the Zoological Society have met with some unfortunate fate. Three or four years ago, Mr. Fraser, the late Curator of that Society, made, at my request, a diligent search for these specimens, but all his endeavours to find them were fruitless: he found the identical box sent by Mr. Telfair, but, alas! the bones of the Solitaire, apterous as it was, had flown away, and the only bones that remained belonged to tortoises."

In the month of July last an opportunity was afforded me by the Secretary of renewing this search, and I had the good fortune to find what I believe to be all the specimens sent to the Society by Mr. Telfair.

Upon my informing Mr. Mitchell of my success, that gentleman, knowing the trouble and interest I had taken to recover them, granted me permission to examine, compare, and describe them, and to bring the subject before the Society.

In the first place, we are led to believe (and I think without the slightest doubt) that these bones came originally from the island of Rodriguez. There cannot be any doubt, also, that Rodriguez and the neighbouring islands were at one period inhabited by several species of large birds. Whether any of the same species of these birds inhabited different islands, or whether each island was inhabited by distinct species, is a question to which I beg most particularly to call your attention: the most recent publication by Mr. Strickland and Dr. Melville would lead us to believe that the true Dodo (*Didus ineptus*) was solely confined to the island of Mauritius, and another species, known as the Solitaire, was said to be its representative on the island of Rodriguez. If this be true, I should have the pleasure of introducing to your notice the bones of at least two new species of birds from that island: I do not however myself feel justified in so doing, but believe some of the bones sent here by Mr. Telfair belong to the true Dodo (*Didus ineptus*). There are also in the collection (I think without doubt) bones of two other species, one of these of much larger size than the Dodo, the other considerably smaller. The bones in question having all the usual and well-known characteristics of those of adult birds, we cannot therefore suppose the differences which they present to be such as might arise from age; and on the other hand, you will perceive that the proportions are too dissimilar to allow of our regarding them as having belonged to different sexes of the same species. There often exists great difference of size in the bones of the opposite sex, but I have never noticed any very evident difference of proportion. These are to me satisfactory reasons for considering them specifically distinct. But to return to the question,—Was the Dodo found on the island of Rodriguez? Sir Thomas

Herbert says *it was*; and his evidence appears to me of much importance, considering the number of years he spent travelling about, visiting these islands, and collecting rare and curious things; having also repeatedly described the Dodo, and very probably brought one to England. I am therefore inclined to regard the assertions made by Sir Thomas Herbert with more respect than they have elsewhere received. It may appear at first sight impossible that the same species of birds which were destitute of the power of *swimming* or *flying* could inhabit islands so far from each other; but, were these islands always in the state in which we find them? may they not at some distant period have been united and formed part of the same land? In endeavouring in this manner to account for the existence of the Dodo upon the island of Rodriguez as well as at Mauritius, it has been remarked that this argument would not hold good, as the islands in question were of volcanic origin: if this be the case, to account for its existence at either place appears to me equally difficult. I am fully aware it has been the practice of late to consider the animals obtained from localities remote from each other specifically distinct; they may be so; but unless we have some certain means of distinguishing them, I do not think we ought to regard them as such.

I now venture to introduce to your notice what I believe to be the *tibia* of the Dodo (*Didus ineptus*): its agreement with the foot in the British Museum struck me as being exceedingly remarkable and conclusive: its size and proportions, as compared with the metatarsal in question, are exactly what I should have expected upon the supposition of their belonging to the same species: they fit each other so perfectly, that one might think they belonged to the same individual. With this evidence before me, I cannot for one moment hesitate in considering the *Dodo of the Mauritius to be identical with the Dodo of Rodriguez*. There are also in this collection two other bones, which, from their size and form, I believe to belong to this species: the most remarkable is the head of the *humerus*, which would indicate by its magnitude and broad attachments that it belonged to a bird of large bulk, while the sudden reduction in the size of its shaft clearly indicates a bird with small wings. The great thickness and consequent weight is sufficient to cause us to suppose that this bird had not the power of flight.

The next bone to which I will call your attention is a right metatarsal, which appears to me to have belonged to a bird known to Leguat as the Solitaire, and described by him during his residence on the island of Rodriguez. I beg to read Leguat's description, in order to point out to you its near agreement in point of size and form with the Turkey, with which bird Leguat compared the bird he called the Solitaire:—

"Of all the birds in the island, the most remarkable is that which goes by the name of the *Solitary*, because it is very seldom seen in company, though there are abundance of them. The feathers of the male are of a brown-grey colour: the feet and beak are like a Turkey's, but a little more crooked. They have scarce any tail, but their hind part covered with feathers is roundish, like the crupper of

a Horse; they are taller than Turkeys. Their neck is straight, and a little longer in proportion than a Turkey's when it lifts up its head. Its eye is black and lively, and its head without comb or cop. They never fly, their wings are too little to support the weight of their bodies; they serve only to beat themselves, and flutter when they call one another. They will whirl about for twenty or thirty times together on the same side, during the space of four or five minutes. The motion of their wings makes then a noise very like that of a rattle, and one may hear it two hundred paces off. The bone of their wing grows greater towards the extremity, and forms a little round mass under the feathers, as big as a musket ball. That and its beak are the chief defence of this bird. 'Tis very hard to catch it in the woods, but easie in open places, because we run faster than they, and sometimes we approach them without much trouble. From March to September they are extremely fat, and taste admirably well, especially while they are young; some of the males weigh forty-five pounds.

"The females are wonderfully beautiful, some fair, some brown; I call them fair, because they are of the colour of fair hair. They have a sort of peak, like a widow's, upon their breasts (*lege* beaks), which is of a dun colour. No one feather is straggling from the other all over their bodies, they being very careful to adjust themselves, and make them all even with their beaks. The feathers on their thighs are round like shells at the end, and being there very thick have an agreeable effect. They have two risings on their *craws*, and the feathers are whiter there than the rest, which livelily represents the fine neck of a beautiful woman. They walk with so much stateliness and good grace, that one cannot help admiring and loving them; by which means their fine mien often saves their lives."—*Leguat's Voyage to the East Indies*, 1708, p. 71.

You will perceive this bird was said to be larger and taller than a Turkey. A comparison of this metatarsal bone with the metatarsal bone of the Turkey I think will satisfactorily show the accuracy of Leguat's description, and at the same time justify our conclusion that this metatarsal bone belonged to the Solitaire of Rodriguez, to which the name of *Didus solitarius* has been applied. I trust I shall be pardoned for avoiding the use of the new generic term adopted by the authors of 'The Dodo and its kindred,' for in a group so little known, and at present so limited in species, it seems to me so much to increase the trouble and difficulty of those who endeavour to study such subjects, that I cannot help expressing my belief that many of the new names so often introduced serve only to impede and embarrass us, and I therefore regard them as much worse than useless.

I have now remaining the bone of a bird which when alive was much *larger*, *heavier*, and more *powerful* than the *Dodo*. For further examples of this bird's bones, I must refer to the plates in the work before alluded to, by Mr. Strickland and Dr. Melville: plate xv. fig. 2, the metatarsal bone of the large species in the Andersonian Museum, Glasgow; fig. 3, a metatarsal bone in the Parisian collection. A glance at these specimens will, I imagine, convince any one that this bird

was of gigantic size, and probably double the weight of the *Dodo*. I am sure it cannot be supposed (after what has been said) that Leguat was describing this great bird when he wrote his beautiful description of the Solitaire. Another important fact will, I think, set this question at rest. Leguat states, that some of the males of the Solitaire weigh *forty-five pounds*. Now we know the weight of the largest Turkeys to be considerably less, rarely reaching *thirty pounds*, while the weight of the Dodo is stated to have been at least *fifty pounds*. It cannot, therefore, be supposed, had Leguat seen birds nearly double the size of the Dodo, he could have made the statements or comparison he has made between the Solitaire and Turkey.

I have before expressed my great dislike to an unnecessary increase of names: I feel, however, the necessity of finding an appropriate name for this large bird, and therefore propose one somewhat familiar to all who have paid any attention to the subject, and apply the name of *Didus Nazarenus* to this the largest species of the genus. In doing this, I may remark that Mr. Strickland, in his work before alluded to, has considered the *Didus Nazarenus* to be a phantom species, which he says has haunted our systems of ornithology from the days of Gmelin downwards.

The conclusions which I have arrived at from the examination of the bones to which I have just called your attention are these:—That there existed formerly three distinct species of Apterous birds in the island of Rodriguez; namely, one which is apparently identical with the *Dodo* (*Didus ineptus*) of the Mauritius; a second, which was well described under the name of *Solitaire*; and a third, which was much larger than either of the above.

12 College Street, Camden Town.

Description of two new species of Mammalia of the genus Antechinus. By John Gould, F.R.S. etc.

One of these species is remarkable for being spotted on the under instead of on the upper surface, and the other for its very diminutive size: both rank among the smallest members of the genus. For the former I propose the specific appellation of *maculatus*; it may be thus described:—

Antechinus maculatus.

Fur short, dense, and closely applied to the skin; general tint of the upper surface dark blackish brown, minutely grizzled with yellowish brown; lower part of the flanks and under surface of the body dark brownish slate-grey, ornamented with oblong spots of greyish white arranged in irregular rows in the direction of the body; down the centre of the throat a streak of white.

	inches.
Length from the tip of the nose to the base of the tail	$3\frac{1}{2}$
——— of the tail	$2\frac{1}{4}$
——— from the tip of the nose to the base of the ear	$\frac{1}{2}$
——— of the ear	$\frac{1}{4}$
——— of the tarsi and toes	$\frac{7}{16}$

Hab. Brushes of the river Clarence, on the east coast of Australia.

The other species I propose to name

ANTECHINUS MINUTISSIMUS.

Fur short, dense, and closely applied to the skin; upper surface and flanks brown, slightly grizzled with black; under surface pale buff, approaching to white on the throat; tail brown above, lighter beneath; feet buffy brown, toes covered with hairs of a somewhat lighter hue.

	inches.
Length from the tip of the nose to the base of the tail	$2\frac{3}{4}$
——— of the tail	$2\frac{1}{4}$
——— from the tip of the nose to the base of the ear	$\frac{7}{16}$
——— of the ear	$\frac{1}{4}$
——— of the tarsi and toes	$\frac{5}{8}$

Hab. Brushes of the east coasts of Australia.

DESCRIPTIONS OF A NEW SPECIES OF PTILOTIS AND A NEW SPECIES OF EÖPSALTRIA. BY JOHN GOULD, F.R.S.

Mr. Gould also exhibited two new species of birds of the genera *Ptilotis* and *Eöpsaltria*, which he characterized as follows:—

PTILOTIS FASCIOGULARIS.

All the upper surface, wings and tail olive-brown, the feathers of the head and back with darker centres, and the primaries and tail-feathers narrowly margined externally with greenish wax-yellow; lores and a streak down the side of the head from the posterior angle of the eye blackish brown; ear-coverts pale yellow; on each side of the neck a patch of yellowish white; feathers of the throat brownish black, each bordered with pale yellow, presenting a fasciated appearance; breast blackish brown; under surface striated with brown and buffy, becoming paler towards the vent; irides lead-colour; bill and feet black.

Total length, $7\frac{1}{2}$ inches; bill, $\frac{7}{8}$; wing, $3\frac{3}{4}$; tail, $3\frac{1}{2}$; tarsi, $1\frac{1}{8}$.

Hab. Mangrove Island, Moreton Bay.

Female.—Similar in colour, but of smaller size.

EÖPSALTRIA CAPITO.

Upper surface olive-green, inclining to brown on the head; wings and tail slaty brown, faintly margined with olive-green; ear-coverts grey; lores and a line descending in front of the eye and the throat greyish white; under surface yellow; irides hazel; bill black; feet brownish flesh-colour.

Total length, 5 inches; bill, $\frac{5}{8}$; wing, $3\frac{1}{8}$; tail, $2\frac{1}{4}$; tarsi, $\frac{7}{8}$.

Hab. Brushes of the River Brisbane, New South Wales.

Remarks.—Shorter and less elegantly formed than *E. Australis*, with a stout broad bill and a proportionately large and heavy head.

Feb. 24, 1852.—W. J. Broderip, Esq., F.R.S., V.P., in the Chair.

ON THE HABITS OF STRIGOPS HABROPTILUS OR KAKAPO. BY DAVID LYALL, M.D., R.N., LATE SURGEON TO H.M.S. ACHERON.

Although the *Kakapo* is said to be still found occasionally on some parts of the high mountains in the interior of the North Island of

New Zealand, the only place where we met with it, during our circumnavigation and exploration of the coasts of the islands in H.M.S. Acheron, was at the S.W. end of the Middle Island. There, in the deep sounds which intersect that part of the island, it is still found in considerable numbers, inhabiting the dry spurs of hills or flats near the banks of rivers, where the trees are high, and the forest comparatively free from fern or underwood.

The first place where it was obtained was on a hill nearly 4000 feet above the level of the sea. It was also found living in communities on flats near the mouths of rivers close to the sea. In these places its tracks were to be seen resembling footpaths made by man, and leading us at first to imagine that there must be natives in the neighbourhood. The tracks are about a foot wide, regularly pressed down to the edges, which are two or three inches deep amongst the moss, and cross each other usually at right angles.

The *Kakapo* lives in holes under the roots of trees, and is also occasionally found under shelving rocks. The roots of many New Zealand trees growing partly above ground, holes are common under them; but where the *Kakapo* is found many of the holes appeared to have been enlarged, although no earth was ever found thrown out near them. There were frequently two openings to these holes, and occasionally, though rarely, the trees over them were hollow for some distance up.

The only occasion on which the *Kakapo* was seen to fly was when it got up one of these hollow trees and was driven to an exit higher up. The flight was very short, the wings being scarcely moved; and the bird alighted on a tree at a lower level than the place from whence it had come, but soon got higher up by climbing, using its tail to assist it.

Except when driven from its holes, the *Kakapo* is never seen during the day, and it was only by the assistance of dogs that we were enabled to find it.

Before dogs became common, and when the bird was plentiful in inhabited parts of the islands, the natives were in the habit of catching it at night, using torches to confuse it. It offers a formidable resistance to a dog, and sometimes inflicts severe wounds with its powerful claws and beak. At a very recent period it was common all over the west coast of the Middle Island, but there is now a race of wild dogs said to have overrun all the northern part of this shore, and to have almost extirpated the *Kakapos* wherever they have reached. Their range is said to be at present confined by a river or some such physical obstruction, and it is to be feared that if they once succeed in gaining the stronghold of the *Kakapo* (the S.W. end of the island) the bird may soon become extinct.

During the latter half of February and the first half of March, whilst we were amongst the haunts of these birds, we found young ones in many of the holes, frequently only one, never more than two, in the same hole. In one case where there were two young ones I found also an addled egg. There was usually, but not always, an old bird in the same hole with the young ones.

They build no nest, but simply scrape a slight hollow amongst the dry dust formed of decayed wood. The young were of different ages, some being nearly fully fledged, and others covered only with down. The egg is white and about the size of a pigeon's.

The cry of the Kakapo is a hoarse croak, varied occasionally by a discordant shriek when irritated or hungry. The Maories say that during winter they assemble together in large numbers in caves, and at the times of meeting, and, again before dispersing to their summer haunts, that the noise they make is perfectly deafening.

A good many young ones were brought on board the ship alive. Most of them died a few days afterwards, probably from want of sufficient care; some died after being kept a month or two, and the legs of others became deformed after they had been a few weeks in captivity. The cause of the deformity was supposed to be the want of proper food, and too close confinement. They were fed chiefly on soaked bread, oatmeal and water, and boiled potatoes. When let loose in a garden they would eat lettuces, cabbages and grass, and would taste almost every green leaf that they came across. One, which I brought within six hundred miles of England (when it was accidentally killed), whilst at Sydney, ate eagerly of the leaves of a *Banksia* and several species of *Eucalyptus*, as well as grass, appearing to prefer them all to its usual diet of bread and water. It was also very fond of nuts and almonds, and during the latter part of the homeward voyage lived almost entirely on Brazilian ground-nuts.

On several occasions the bird took sullen fits, during which it would eat nothing for two or three days at a time, screaming and defending itself with its beak when any one attempted to touch it. It was at all times of an uncertain temper, sometimes biting severely when such a thing was least expected. It appeared to be always in the best humour when first taken out of its box in the morning, hooking on eagerly with its upper mandible to the finger held down to lift it out. As soon as it was placed on the deck it would attack the first object which attracted its attention—sometimes the leg of my trowsers, sometimes a slipper or a boot. Of the latter it was particularly fond: it would nestle down upon it, flapping its wings and showing every symptom of pleasure. It would then get up, rub against it with its sides, and roll upon it on its back, striking out with its feet whilst in this position.

One of these birds, sent on shore by Capt. Stokes to the care of Major Murray of the 65th Regiment at Wellington, was allowed to run about his garden, where it was fond of the society of the children, following them like a dog wherever they went.

Nearly all the adult Kakapos which I skinned were exceedingly fat, having a thick layer of oily fat or blubber on the breast which it was very difficult to separate from the skin. Their stomachs contained a pale green, sometimes almost white, homogeneous mass, without any trace of fibre in it.

There can be little doubt but that their food consists partly of roots (their beaks are usually more or less covered with indurated mud), and partly of the leaves and tender shoots of various plants.

At one place where the birds were numerous we observed that the young shoots of a leguminous shrub growing by the banks of a river were all nipped off, and this was said by our pilot, who had frequented these places for many years in a whaling vessel, to be the work of the Kakapo.

Their flesh is white, and is generally esteemed good eating.

March 23, 1852.—Professor Owen, F.R.S., Vice-President, in the Chair.

On the Species of the Genus Sericinus. By G. R. Gray, F.L.S., F.Z.S. etc.

In the Transactions of the Entomological Society of London for 1851 (p. 173), Mr. Westwood established a Lepidopterous genus under the name of *Sericinus*, which he founded on bad specimens of an insect sent from Shanghai by Mr. R. Fortune, and then supposed to comprise "both sexes" of the insect figured by Donovan in his 'Insects of China,' pl. 27. f. 1, under the appellation of *Papilio Telamon*, no specimen of which, as Mr. Westwood justly observed, was then known to exist "in any continental or British collections."

Lately Mr. Fortune has returned to this country, bringing with him many specimens of the same insect in a more perfect state, which enables me to take up the genus and endeavour to define the species and give characters for each. I should state, however, that I think I shall be able to point out that these "two sexes" are, in fact, distinct species of the genus.

I think it best, first, to give a description of the species figured by Donovan under the name of *Papilio Telamon*, but which will now stand under that of

Sericinus Telamon, Westw.

The fore wings yellowish white, with the anterior and most of the exterior margins rather broadly edged with black; an abbreviated line in the middle, another at the anterior part of the costal area, and then a curved line of irregular spots, which ends towards the posterior angle, and with two small spots at the anterior angle near the outer margin, also one spot on the inner margin, black. The hind wings yellowish white, with the anal angle black, which apparently extends towards the anterior margin by two oblong spots of the same colour; the anal angle is ornamented by a crimson line that reaches to the third nervure from the inner margin; there are also three pale blue lunes. The under surface of the fore wings is very similar to the upper side, except that the black which surrounds the anterior and part of the exterior margins is not apparent. The under surface of the hind wings is also similar to the upper side, except that the spot of the anterior margin is ornamented by a crimson centre.

Donovan informs us that the only specimen brought to Europe was taken near Pekin, by a gentleman in the suite of Earl Macart-

ney, and was at that time, when Donovan figured it, in the possession of Mr. Francillon.

Having thus recorded the peculiarities of the species which must be considered the type of this genus, I shall now point out how one series of specimens brought by Mr. Fortune differ from it, though in general they are very similar to the one just described. Yet the uniformity of all the specimens of the series, which comes nearest to Donovan's figure, induces me, provisionally at least, to form it into a separate species, under the name of

Sericinus Montela*. (Cat. of Lepid. B. M. i. 78. pl. 13. fig. 1, 2.)

Like the preceding; but the fore wings have a large subtriangular black spot very near the base, which is divided into three spots by the nervures. The anterior margin is slightly edged, and the exterior margin is, for most part, broadly margined with black. The hind wings have a broad band obliquely across the costal area, and the crimson band at the anal angle appears broader in this species.

The species is always, as Mr. Fortune has kindly informed me, found in the valleys among the hills.

Sericinus Fortunei†. (Cat. Lep. B. M. i. pl. 13. fig. 5.)

The fore wings are yellowish white, with many irregular black spots which vary in size, some of them so placed that they apparently form five bands across the wing; the external margin is also black. The hind wings also yellowish white, with a basal band and three irregular curved bands of black spots; the second band from the base is broadest at the anterior angle, and marked with a small crimson spot; while that portion towards the anal angle is margined exteriorly by an irregular crimson band, which extends from the angle to the fifth nervure; the third or marginal band is ornamented on the deep black below the crimson by a series of pale blue lunes. The under surfaces of all the wings are less prominently marked, otherwise they are similar to the upper side, except that on the fore wings there are two crimson spots, one on the band near the costal area and the other on the posterior margin.

This species is found, according to Mr. Fortune, on the sides of the hills.

Mr. Wilson Saunders has obliged me by the loan of a specimen for examination, which presents several differences from those previously noticed. It is rather smaller and the caudal appendages are shorter than in the other three species; the latter being only about half an inch in length. These with other characters induce me to form it into a species under the name of

* *Sericinus Telamon*, Westw. & Hewits. Gen. Diurnal Lep. p. 530 suppl. pl. 1. fig. 1.

† *Sericinus fasciatus*, Brem. & Grey, Beitr. Schm. des Nörd. China, p. 5. Since this paper was read, Mr. Fortune has sent a series of specimens which show that this is the female of the preceding.

Sericinus Telmona*. (Cat. Lep. B. M. i. pl. 13. fig. 3.)

The fore wings ochraceous, with the base black, and the other black markings placed as in *S. Montela*, though not quite so prominent, but the short band which crosses the wing just beyond the costal area and the spot on the posterior margin are both ornamented with a small crimson spot. The hind wings have the inner margin black, and are without the basal spot in the costal area; the crimson band at the anal angle extends, as in *S. Fortunei*, to the fifth nervure, and like it also the spot on the anterior margin is ornamented by a crimson mark, which is more equally placed with the commencement of the crimson band that advances to the anal angle, than in the other species; the black space at the anal angle is less in size, but is furnished with blue lunes. The under surface of the fore wings is marked like the upper side. That of the hind wings is also similar to the upper side, but the black spots on the anterior margin are both ornamented with crimson; the lengthened crimson band is marked between the second and third nervures from the anal angle with a white lune, and there is also a less quantity of black at the anal angle.

This species (male) was also brought to this country with the others by Mr. Fortune, through whose exertions we are thus enabled to describe three additional species of a division which had been hitherto only known by the one figured by Donovan.

Notes on the Dissection of a species of Galago. By W. H. Flower, Curator to the Middlesex Hospital Museum.

Having recently had an opportunity of examining the body of a Galago which died in the Society's Gardens, and which I believe to be an undescribed species, I proceed, at the request of the Secretary, to lay before the Society some notes on its anatomy made during the dissection.

The animal was a male. When I received it the skin was removed, and its dimensions were as follows:—

	in.	lin.
Length of the head and body	$9\frac{1}{2}$	0
——— of the tail	$13\frac{1}{2}$	0
——— of the head	2	7
Breadth of the head (at the widest part, viz. the malar bones)	1	9
Length of the humerus	2	3
——— of the fore-arm	2	7
——— of the hand	1	0
——— of the femur	3	0
——— of the tibia	3	0
——— of the foot	3	0

Dentition:—inc. $\frac{4}{6}$; can. $\frac{1-1}{1-1}$; mol. $\frac{5-5}{5-5}=34$.

* The female of this species is described as *Sericinus Greyi*, Brem. & Grey, Beitr. Schm. des Nörd. China, p. 6.

The upper incisors very small, placed vertically, a considerable space existing between the two middle ones. The lower incisors long, very narrow, projecting horizontally, and closely approximated.

The stomach was simple, almost globular in form; the œsophagus entered far to the right, the cardiac orifice very nearly approaching the pyloric, so that while the greater curvature measured $6\frac{1}{2}$ inches, the lesser was but $\frac{3}{4}$ of an inch. The small intestines were wide, 46 inches in length. The cæcum was nearly 5 inches long, wider near its commencement than any part of the intestine, and slightly sacculated, but tapering and becoming smooth towards the extremity. The ileum entered the colon at a very obtuse angle, and there was scarcely any difference in the calibre of these two parts of the intestine. The colon was without sacculations and peculiar in form, being widest at the upper end, then gradually contracting till it became narrower than any part of the intestine, and dilating again into the rectum; and this appeared not to be the result of muscular contraction, as it retained this form after macerating in water several days and then inflating. The length of this part of the intestine, from the ileo-cæcal valve to the anus, was 18 inches.

The liver presented three very distinct lobes: the left one was entire; the middle cleft into three by two fissures on its under surface, in one of which (that most to the right) the gall-bladder was placed; the right lobe was entire, but on its under surface was placed the lobulus Spigelii.

The gall-bladder was pyriform; the duct, 3 lines in length, joining the hepatic duct, formed the common gall-duct, which was half an inch long and entered the duodenum one inch from the pylorus.

The spleen was long, narrow and flattened, half an inch wide at the broadest part, and $2\frac{1}{2}$ inches in length.

The kidneys, simple, large and oval, were 1 inch long and 8 lines broad; the right one situated nearly the whole length of the kidney higher than the left.

The penis was 3 inches in length, containing a bone 11 lines long. The skin of the glans covered with minute spines or tubercles, which, when examined microscopically, were found to be tooth-like bodies, most having two points, some one, others three or more, all directed backwards.

The testes were oval, 8 lines long, 5 broad.

The vesiculæ seminales consisted of two large simple culs-de-sac, 7 lines in length.

On opening the thorax the left lung was found to have two lobes, the right four.

The heart presented nothing unusual. From the arch of the aorta two large vessels arose, the first giving rise to the innominate and left carotid; the second being the left subclavian.

On examining the brachial and femoral arteries, no division into smaller trunks, forming a rete mirabile, as is observed in several animals belonging to this family, was discovered. The brachial artery perforated the humerus near its lower extremity.

The tongue was long and narrow, $2\frac{1}{2}$ inches long from the root of

the epiglottis to the tip, and 5 lines broad. Its dorsal surface was covered with small papillæ, and at the posterior part were three large or circumvallated papillæ, arranged as the points of the letter V. On the under surface is a curious body, 7 lines long and 3 wide, the tip of which is free, flat and pectinated, the rest free at the sides and attached in the middle. From the form, position and size of this singular organ, one cannot help conjecturing that the pectinated end may act as a brush to free the inferior incisor teeth from adherent particles of the insect food on which the animal subsists.

The submaxillary and parotid glands were very large, particularly the former.

The masseter and temporal muscles were largely developed, and the whole muscles of the upper extremity very powerful.

The cerebral hemispheres were large, and extending some way back over the cerebellum, but their surface was remarkably smooth and almost free from convolutions, resembling in this respect the brain of Cheiroptera, to which order the Lemurs present several points of affinity.

LINNÆAN SOCIETY.

January 17th, 1854.—Robert Brown, Esq., V.P., in the Chair.

Read a letter from David Moore, Esq., A.L.S., of the Botanic Garden, Glasnevin, near Dublin, addressed to James Yates, Esq., F.L.S., &c. "On the introduction of *Anacharis Alsinastrum*, Bab. into Ireland."

"It is rather remarkable," Mr. Moore observes, "that it should have been noticed in England and in Ireland about the same time. I am not perfectly certain now, but I think it was in the early part of 1842 I first saw the plant growing in a small pond in the garden of Isaac M. D'Olier, Esq., of Booterstown, near Dublin. That gentleman has been long known for his zeal in horticultural pursuits, as well as for his fine collection of exotic plants, which he has been in the habit of getting from various parts of England, as well as from the continent, along with some of which he considers the *Anacharis* was introduced to his collection, though he has no knowledge of its being so. At the time stated, Mr. D'Olier acted as Chairman of the Committee of Botany for the Royal Dublin Society, which caused me to have frequent official intercourse with him, and for which purpose I occasionally went to Booterstown. In the centre of his garden, where a number of gold and silver fish were kept in a small pond, we first noticed the *Anacharis*. I did not then know the plant, further than that it was not a British species, and brought some of it to cultivate in the Botanic Garden, where it was placed in an earthenware crock and put in the pond. Little more was thought about it, until the late Mr. Macauley brought it from the pond in Mr. D'Olier's garden to the College garden, about the time inquiry was awakened respecting it in England. My foreman then told me there was plenty of it growing in our pond, which I had not